

The Vienna Doctoral Programme on Complex Quantum Systems  
invites you to a

## Seminar Talk

by

**Cindy Regal**

*University of Colorado, Boulder*

***“Harnessing opto-mechanical correlations in electro-optic conversion  
and quantum-limited interferometry”***

I discuss our work in quantum cavity optomechanics, and some recent experiments harnessing correlations between multiple modes – like those behind ponderomotive squeezing. In experiments to create a quantum converter between microwave and optical fields, we reduce the impact of thermal noise using electro-optic correlations in a 50% efficient converter. In an interferometer limited by the tradeoff between shot noise and backaction, we use correlations to improve broadband displacement detection at the standard quantum limit.

**Monday, 14 January, 2019**

**16:30h get-together with coffee and snacks!**

Lise Meitner Hörsaal, Strudlhofgasse 4, 1<sup>st</sup> floor, Vienna

The seminar talk will be preceded by a CoQuS Student talk at 17:00h  
by

**Martin Blaha**

*TU Wien*

***“Observation of Multimode strong coupling of laser-cooled atoms to fiber-guided photons”***

Hosted by: Arno Rauschenbeutel